

3
QH
1
B4X
NH

7, pp. 433-438

12 October 1976

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

A NEW SPECIES OF *ARICIDEA* (POLYCHAETA:
PARAONIDAE) FROM FLORIDA

BY BETSY BROWN

*College of Marine Studies, University of Delaware,
Lewes, Delaware 19958*

A new species of the genus *Aricidea* (Paraonidae) from the Indian River lagoon of the east coast of Florida is described below. Specimens were collected by Dr. David K. Young and his staff of the Smithsonian Institution's Fort Pierce Bureau (FPB). Additional specimens from the west coast of Florida, collected by Dr. John L. Taylor and Mr. Stuart L. Santos and deposited in the National Museum of Natural History (USNM), were examined and referred to the new species.

I am grateful to Dr. Young for the loan of specimens from the Indian River, to Ms. Ruth Swanson, Dr. Donald Maurer, and Dr. Les Watling for useful criticism during preparation of the manuscript, and to Sandy Steele for careful typing of the final draft. I particularly wish to thank Dr. Marian H. Pettibone of the Smithsonian Institution for the loan of specimens, for considerable assistance with some of the literature and systematic problems, and for critically reviewing the manuscript. Types are deposited in the Smithsonian Institution (USNM). This is contribution 109, University of Delaware, College of Marine Studies.

PARAONIDAE Cerruti
Aricidea Webster

Aricidea philbinae, new species

Material examined: Holotype (USNM 53172) and one paratype (USNM 53173): Indian River lagoon adjacent to Hutchinson Island, Ft. Pierce, Florida (20°20.9'N, 80°15.7'W), on *Halodule wrightii* grass-flats, 1 m, in muddy sand, collected 12 April 1973. Four paratypes (USNM 53174): Indian River lagoon just N of St. Lucie Inlet, St. Lucie,

Florida (27°10.9'N, 80°10.3'W) on *H. wrightii* grassflats, intertidal to 1 m, in muddy sand, collected 16 November 1974. Other specimens: about 50 animals in Indian River lagoon ranging from Titusville, Florida (just N of Haulover Canal) (28°44.1'N, 80°45.5'W) to just N of St. Lucie Inlet, St. Lucie, Florida, intertidal to 1 m, collected 1974–1975, on *H. wrightii* grassflats, several bottom stations, D. K. Young and staff, collectors. Tampa Bay, Florida (27°47'N, 82°40'W) (USNM 48936) 26 specimens, collected September 1971, J. L. Taylor, collector. Tampa Bay, Florida (USNM 48936) 3 specimens, collected 27 October 1969, S. L. Santos, collector. Lassing Park, St. Petersburg, Florida (27°45.2'N, 82°37.7'W) (USNM 50280/1) 9 specimens, collected 18 April and 20 July 1970, S. L. Santos, collector.

Description: Length up to 12 mm, width up to 0.5 mm, up to 77 segments, several ovigerous. The 4 ovigerous specimens ranged from 9.8–10.6 mm long and 0.36–0.44 mm wide. Body cylindrical, widest in branchial region, tapering and flattened dorsoventrally more posteriorly. Prostomium subtriangular (Fig. 1b, c), rounded anteriorly, fused with achaetous buccal segment, forming lateral lips of ventral mouth. Posterior lip of mouth formed by anterior edge of first setiger. Median antenna clavate, short, extending to setiger 2, unequally bifid distally, with smaller subterminal process (Fig. 1c) or rarely with asymmetrical terminal process (Fig. 1b). Cilia present on distal tips of bifid antenna. Nuchal slits posterolateral to median antenna. Pigment spots sometimes present anterior to nuchal slits, as well as on anterior region of body, particularly on dorsal surface. Branchiae 13–15 pairs, beginning on setiger 4. Branchiae widest proximally, tapering to rounded tips and overlapping slightly middorsally (Fig. 1a, c). Anterior 7–10 branchial pairs usually longer and more robust. Single small orbicular papilla posterior to and hidden by branchia on branchial segments (Fig. 1a). Notopodial postsetal lobes small, spherical on first 2 setigers, more elongate on third, subulate in branchial region (Fig. 1a, c) becoming more slender and cirriform in postbranchial region (Fig. 1e). Dense bundles of basally thickened and evenly tapered capillary setae in prebranchial and branchial regions, numbering about 10 in notopodia and about 15 in neuropodia. Anterior postbranchial setigers with finer capillary setae, numbering about 5 in notopodia and 7 in neuropodia. Posterior notopodia with about 3 (2–5) slender capillaries. Modified neuropodial hooks beginning on about setiger 22 (19–24). Neuropodia with about 5 (3–7) very slender capillaries and 5 (4–8) modified neurosetae (Fig. 1e). Modified neurosetae hooked or curved distally, with terminal arista (apparently fragile, sometimes absent), with small subterminal spine on concave side (perhaps part of subterminal hood) (Fig. 1d, e). Pygidium with pair of small anal cirri.

Etymology: It gives me great pleasure to name this species for Maybelline Philbin, who was an unparalleled source of inspiration prior to the preparation of this manuscript.

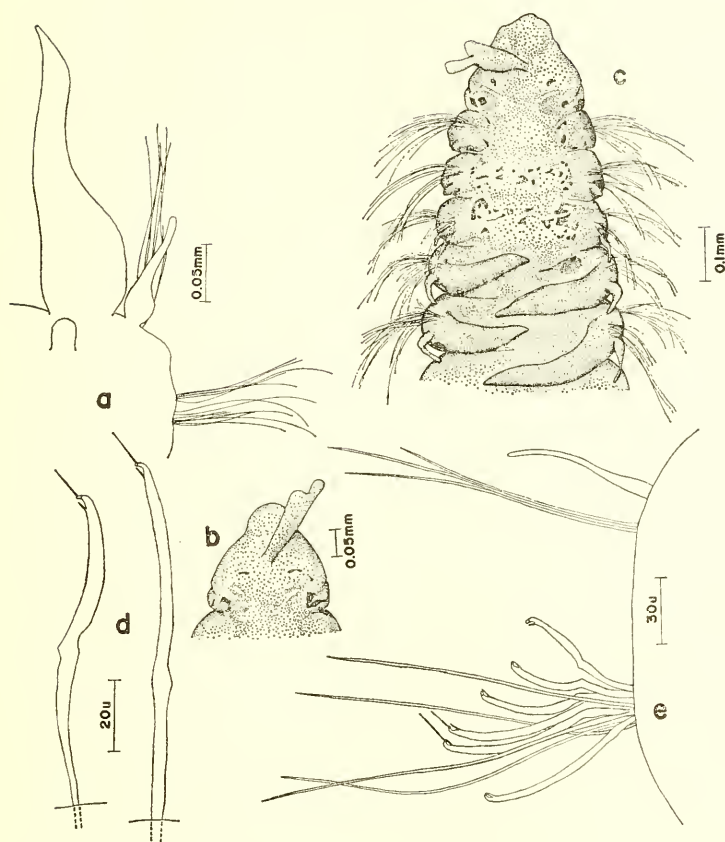


FIG. 1. *Aricidea philbinae*, new species: a, Parapodium from brachial region, posterior view; b, c, Anterior ends of 2 different specimens, dorsal view; d, Modified neurosetae from posterior parapodium; e, Posterior parapodium, posterior view.

Distribution: East and west coasts of Florida. Intertidal to 1 m.

Remarks: *Aricidea philbinae* is close to *Aricidea jeffreysii* (McIntosh) which was described by Pettibone (1965:134) for paraonids from Virginia. Cerruti first used *Aricidea jeffreysii* (McIntosh) when he established the family Paraonidae. Since then, it has been used widely as *A. jeffreysii sensu* Cerruti by numerous authors. Strel'tsov (1973) presented a thorough revision of the family Paraonidae in which he reexamined many specimens including type material. After reviewing the holotype of *Scolecopsis* (?) *jeffreysii* McIntosh, 1879, from the Davis Strait, he concluded (1973:106, 159) that it should

be an indeterminable *Aricidea* sp. He did so because the type-specimen was a fragment of 26 anterior segments lacking the modified posterior neurosetae necessary for diagnostic species description. Therefore, McIntosh's name should not be used and all the subsequent records of *A. jeffreysii* have needed to be referred to other species. Many of them were referred by Laubier (1967:102) and Strel'tsov (1973:105) to *Aricidea (Acesta) cerrutii* Laubier, 1966.

Strel'tsov (1973:91, 159) examined 6 paratypes of *Aricidea (Acesta) catherinae* Laubier, 1967, from the Mediterranean (Banyuls-sur-Mer, France). After examining specimens of each of the following species, he referred them to *A. (Acesta) catherinae*: the records of *A. jeffreysii* by Pettibone (1963, 1965); the records by Hartman of *Aricidea lopezi* (1963:38, as *A. lopezi*, not Berkeley and Berkeley); and *Aricidea zelenzovi* Strel'tsov, 1968. From material on loan from USNM, I examined 3 paratypes of *A. catherinae* from France (USNM 35914) and numerous specimens identified as *A. jeffreysii* by Pettibone from Maine (USNM 28940), Massachusetts (USNM 28935, 31496/7) and Virginia (USNM 31498-31500). These specimens agreed for the most part with the descriptions of *Aricidea catherinae* by Laubier (1967:112) and Strel'tsov (1973:91). None of the specimens showed a bifid antenna as found on *A. philbinae*. The revised distribution of *A. catherinae* (Strel'tsov, 1973) therefore, is: Atlantic coast of North America (from Gulf of St. Lawrence to Chesapeake Bay), coast of Uruguay, Mediterranean, Barents Sea, region of Kurile Island, off Southern California, in 2 to 1929 m.

Aricidea catherinae and *A. philbinae* agree in the following characters: Median antenna is relatively short; branchiae begin on setiger 4; notopodial postsetal lobes are small, bulbous on first 2 setigers, subulate and cirriform more posteriorly; absence of modified setae in notopodia; neuropodial lobes lacking; modified setae found in posterior parapodia, possessing terminal aristae and short, subterminal spines ("hoods").

Median Antenna: The median antenna of *A. catherinae* is enlarged in the midregion by a varying amount and is thinner distally. This agrees with Laubier (1967:114, Fig. 4a, b, c) and Strel'tsov (1973:91). Strel'tsov's (1973) illustration of the dorsal view of the median antenna might lead one to believe that it supports a secondary process. This is not the case, as he states in the text and as I have observed in examination of specimens. On the *A. catherinae* identified as *A. jeffreysii* by Pettibone (USNM 28935, 28940, 31496-31500) and examined by me, the swelling of the midregion of the antenna was so reduced as to appear subulate.

Branchiae: Strel'tsov (1973:91) found that the number of branchial pairs of *A. catherinae* varied with the size of the specimen, smaller specimens (0.15 mm width) with 8-12 pairs and larger ones (0.7-0.9 mm) with up to 25 pairs. *A. philbinae* has 13-15 pairs of branchiae and a maximum width of 0.5 mm.

Setae: The modified neurosetae of *A. catherinae* and *A. philbinae* are similar possessing terminal aristae and a short, subterminal spine (or "hood"). The "hoods," visible on the concave side, are very difficult to observe. In examination of the paratypes of *A. catherinae*, Strel'tsov (1973) observed a short, spinelike structure below the tip of the seta on the concave side, probably corresponding to a part of the "hood." My observations of specimens borrowed from the USNM correspond with this. Distinct hoods on the modified setae were depicted by Laubier (1967:Fig. 5a-d). The appearance on the modified neurosetae as having hoods or short, subterminal spines seems dependent upon the optical equipment of the observer.

Strel'tsov (1972:150) documented the setal morphology of the family Paraonidae. He described 3 main groupings concerning the development of specialized setae within the family. The first group, found on the dorsal parapodial branches of the branchial and postbranchial segments, includes lyrate setae and aciculate setae bearing spines. Setae of the second and third groups are distributed on the ventral branches of the postbranchial parapodia. Group 2 contains "pseudocompound" setae, hooked setae with a subterminal spine and "hooded" setae. According to Strel'tsov's illustration (1972:90, Fig. 1) group 2 setae may be distally curved. Group 3 includes thickened setae, setae with a terminal spine, and various hook-shaped setae which lack spines. These may be either smooth or possess thin hairs on their distal ends. The classification of the setae of *A. philbinae* in this scheme is uncertain. They possess the character of group 3 by having a terminal spine and by being hook-shaped. There is no indication of pubescence on the setae nor do they appear thickened. However, they also possess a hood or a short subterminal spine (as discussed earlier) giving them the character of group 2.

In Florida, *A. philbinae* has been collected in association with *Aricidea fragilis* Webster, 1879 and *Aricidea taylori* Pettibone, 1965 (Pettibone, 1965:129, 131). These 3 species differ in the following characters:

	<i>A. fragilis</i>	<i>A. taylori</i>	<i>A. philbinae</i>
Median Antenna	Subulate	Clubbed	Clavate, bifid
Branchiae	50-60 pairs	26-29 pairs	13-15 pairs
Posterior Modified Parapodial Setae	Stouter basally, tapering abruptly in midregion to capillary tips, sometimes fractured at mid-point	Bidentate, aristae arise terminally between teeth	Unidentate, curved distally, with short subterminal spine (hood), terminal aristae

Pettibone (1965:131) described the median antenna of *A. taylori* as "short, extending at most to first setiger, clubbed (one paratype with distal tip bifid, evidently an anomaly. . .)." The holotype and paratype (USNM 31494/5) were examined and the terminally bifid setae and median antenna were as described. The anomalous paratype could not be located (according to Pettibone in correspondence, one paratype was sent to Dr. Laubier in exchange, the other paratype apparently has been lost). The relationship of its setae and antenna to those of *A. philbinae* could not be determined.

LITERATURE CITED

- HARTMAN, OLGA. 1963. Submarine Canyons of Southern California, Part 3. Systematics: Polychaetes. Allan Hancock Pac. Exped. 27(3):1-93.
- LAUBIER, LUCIEN. 1967. Sur quelques *Aricidea* (Polychètes, Paraonidae) de Banyuls-sur-Mer. Vie Milieu 18(1A):99-132.
- PETTIBONE, MARIAN H. 1963. Marine Polychaete Worms of the New England Region. 1. Aphroditidae through Trochochaetidae. Bull. U.S. Nat. Mus. 227:1-356.
- . 1965. Two new species of *Aricidea* (Polychaeta, Paraonidae) from Virginia and Florida, and redescription of *Aricidea fragilis* Webster. Proc. Biol. Soc. Wash. 78:127-140.
- STREL'TSOV, V. E. 1972. [On the morphology of the setae of the polychaete family Paraonidae Cerruti, 1909 (Polychaeta, Sedentaria).] Doklady Akad. Nauk. SSSR, 202(5):1219-1222. [In Russian]. English translation, Proc. Acad. Sci. USSR, Biol. Sci. Sec., 202:148-150.
- . 1973. [Polychaete worms of the family Paraonidae Cerruti, 1909 (Polychaeta, Sedentaria).] Akad. Nauk. SSSR. Murmanskii Morsk Biol. Inst., 1-170 [In Russian].